

Central Enteric Reference Laboratory,  
Colindale Avenue,  
London, N.W.9.

6th October, 1953.

Dear Josh,

Thank you for your letter of September 11th. I enjoyed the Rome meeting very much indeed. I attended it in the most pleasant way possible; three others and I travelled through France, Switzerland and Northern Italy to Rome. We crossed the Alps by the Simplon and, after Genoa, skirted the Mediterranean along one of the most delightful stretches of the Italian coast. We returned from Rome by a different route - through Florence, Venice, Verona, St. Moritz, Zürich and Basle.

The meeting was too crowded. There were over three thousand "Congressisti" and their families made the population up to something over five thousand. It was very difficult to get to all the papers I wanted to hear because the sections were widely separated. I always feel that mammoth gatherings of this sort have only a limited value. However, we were extremely well catered for physically: there were two large receptions, including one tremendous affair in the Campidoglio - an ornate palace. Both these receptions were held partly in the open air and were accompanied by large quantities of food, a spate of drinks and much in the way of soft lights and sweet music. In each case, we were ushered in between ranks of huge soldiers with enormous shoulders and minute heads. We discovered that when it comes to getting to the food, the healthy Roman adult male is very difficult to beat. I was lucky to escape with a few superficial bruises. Following the banquet on the last night of the Congress there was a ball held in the Grand Hotel. Unfortunately, the orchestra was totally lacking in imagination and played rather like a military band.

I hope that the future International Congresses will be less socially ostentatious and more scientifically profitable.

I expect that, by now, Bernstein will have settled down to work. He was here a few days before he left, and I assured him that he would thoroughly enjoy his stay with you, as I know he will. I hope that he has managed to come to some arrangement about sharing Boris Rotman's apartment.

I am glad to hear that phage k is a good transducing agent. Helen Byers hinted that there was some error in the titre stated on the label. This is really my fault because I told our senior technician what to write but did not check its accuracy after he had written it. As I said in my letter of the 16th July, the titre of this stock preparation is  $3 \times 10^9$ .

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Under separate cover I am forwarding you 5ml each of the stock preparations of phages b3, d1, d4, d6, f2, t, 25', 26', 28', 29' and 30', and I enclose a table showing their subdivision into serological groups. This table is copied from Table 3 of the latest paper in the Journal of General Microbiology by Dr. Felix and myself. We are sending you a reprint of this and of the paper that preceded it. Phages b3 and 28' appear to be identical and do not seem to be type-determining phages. Phages d1 and d4, which are type-determining phages, also seem to be identical. Phages d6, f2, 29' and 30' are serologically indistinguishable but seem, nevertheless, to be distinct phages. All of these phages were grown on Craigie's Vi-phage Type A of Salm. typhi. The titres - none of them high, I am afraid - are indicated on the labels, as are also the methods by which they were freed from the propagating strain. If you need more information about the method of preparation of stocks, please let me know.

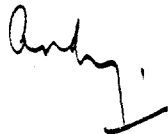
Enclosed with the phages you will find fresh subcultures of Salm. cholerae suis (1348); Salm. newport var. puerto rico and Salm. fayed. The last organism, by the way, was first isolated by me in the Canal Zone of Egypt in 1945. These strains have not been plated for four years. I have no idea as to which phage in pool 2 they reacted with because the separate phages were not tested. You are right in assuming that the protocols gave only the positive reactions encountered in this survey; the tests covered the entire range of Salmonellas known at that date (January, 1949).

I am glad that you have met Bill Hayes. He is one of the most generally liked people I know. I agree with you that there have been attempts to infuse a personal background into this scientific controversy and, for this reason alone, it is fortunate that you have had an opportunity to meet each other.

As I have indicated earlier, I met Helen while she was over here. Unfortunately, she arrived at a difficult time for me - I was moving house, refurnishing, preparing a paper for Rome and <sup>doing</sup> a host of other things simultaneously, so that I could do nothing to entertain her. However, I put her in touch with Bruce and he did quite a lot for her. I have heard recently that she contracted amoebic dysentery while in Italy. Please tell her that I hope she has made or will make a rapid recovery from this.

My kindest regards to Esther and yourself.

Sincerely,



Dr. J. Lederberg,  
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Wisconsin.

Table 8. Serological groups of latent phages of Salmonella typhi

Group 1	Group 2	Group 3	Group 4
Phage b3 Phage 28'	(a) { Phage d1 Phage d4 (b) Phage k [Group 2 is related to Salmonella phage anti-O no. 2.]	(a) { Phage d6 Phage f2 Phage 29' Phage 30' (b) { Phage 25' Phage 26'	Phage t

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